Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

PROBLEMS FOR SOLUTION.

ARITHMETIC.

120. Proposed by ELMER SCHUYLER, United States Naval Academy, Annapolis, Md.

How many balls 1 inch in diameter can be put into a cubical box 1 foot in the *clear* each way, putting in the maximum number? [From Greenleaf's *Treatise on Algebra.*]

121. Proposed by PAUL ROULET, A. M., Professor of Mathematics, Fairmount College, Wichita, Kan.

Three men, named Adams, Morris, and Stoughton, with their sons, Edward, Nathan, and Walter, have each a piece of land in the form of a square. Mr. Adams' piece is 23 rods longer on each side than Nathan's, and Mr. Stoughton's piece is 11 rods longer on each side than Edward's. Each father has 63 square rods of land more than his son. Which of these persons is father and son, respectively?

⁂ Solutions of these problems should be sent to B. F. Finkel not later than Dec. 10.

ALGEBRA.

109. Proposed by B. F. FINKEL, A.M., M.Sc., Professor of Mathematics and Physics, Drury College, Springfield, Mo.

$\frac{1}{\sqrt{(x+1)}}+\frac{1}{\sqrt{(x-1)}}=\frac{1}{\sqrt{(x^2-1)}}$; find value of x satisfying this equation.

110. Proposed by J. C. CORBIN, Pine Bluff, Ark.

I find the annexed problem in a secular newspaper:

Put down any sum of pounds, shillings and pence under £11, taking care that the number of pence is less than the number of pounds. Reverse this sum, putting pounds in the place of pence, and subtract from original amount. Again reverse this remainder and add. The result in all cases will be £12 18*s* 11*d*, neither more nor less, whatever the amount with which we start.

Will some of the MONTHLY's contributors verify and explain or disprove it?

⁂ Solutions of these problems should be sent to J. M. Colaw not later than Dec. 10.

GEOMETRY.

128. Proposed by W. H. CARTER, Vice-President and Professor of Mathematics, Centenary College, Jackson, La.

Given $F=\Delta^{n-1}\div(n-1)!.\Delta_1.\Delta_2\ldots\ldots\Delta_n$ where Δ=the determinant $(a_1b_2c_3\ldots\ldots k_n)$ and $\Delta_1\Delta_2\ldots\ldots\Delta_n$ are the minors of the elements of the nth column; and a_m, b_m, $c_m\ldots\ldots$etc., $(m=1, 2, 3\ldots\ldots n)$ are the coefficients of n given equations containing $n-1$ variables. Show (1) that $n=3$, F=the area of a triangle, and (2) if $n=4$, F=the volume of the tetrahedron.

129. Proposed by WILLIAM HOOVER, A.M., Ph.D., Professor of Mathematics and Astronomy, Ohio University, Athens, Ohio.

Show that at no point of an ellipse will the circle of curvature pass through the center, if the eccentricity be less than $\frac{1}{2}\sqrt{2}$.